Assignment 06 — 24/10/2018 – v1.0a
Software Metrics and Problem Detection

Please submit this exercise by mail to sma@list.inf.unibe.ch before 31 October 2018, 10:15am.

Note: For the following exercises you should use the pre-configured Moose 6.1 environments available in 32 bit flavor for Linux, Windows, and macOS. Please choose the correct version for download in accordance with your current platform.

Exercise 1: Metrics (8 Points)

a) What is the cyclomatic complexity? Explain the term and use the words benefit and drawback in your answer.

b) Which other metrics do you know? List at least four and provide a short description for each.

c) Do metrics always express problems? In other words, is, for example, the lack of cohesion always a property to optimize?

d) How and when are nowadays checks for those metrics integrated into development processes?

Exercise 2: Evaluation of metrics (2 Points)

a) Write a query to find all classes that have more than 42 methods.

b) Write a query to find all methods that have cyclomatic complexity more than 84.

c) What kinds of methods have a cyclomatic complexity of more than 84?

d) Is 84 a large value for the cyclomatic metric?

Exercise 3: More evaluation of metrics (6 BONUS Points)

a) Write a query to obtain the list of classes from any package that begins with org.argouml.core or org.apache.solr that call deprecated methods. The packages can be downloaded here and here.

b) Write a query to obtain all attributes that are public and camel case with capital letters, but are not declared final.

c) Advanced: Write a query to obtain the list of methods that make more than one call to methods from deprecated classes.